

# 10th Class 2017

Math (Science)	Group-I	PAPER-II
Time: 20 Minutes	(Objective Type)	Max. Marks: 15

**Note:** Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling two or more circles will result in zero mark in that question.

**1-1- An equation which remains unchanged when  $x$  is replaced by  $\frac{1}{x}$  is called a / an:**

- (a) Exponential equation
- (b) Reciprocal equation ✓
- (c) Radical equation
- (d) Quadratic equation

**2- If  $\alpha, \beta$  are the roots of  $3x^2 + 5x - 2 = 0$ , then  $\alpha + \beta$  is:**

- (a)  $\frac{5}{3}$
- (b)  $\frac{3}{5}$
- (c)  $-\frac{5}{3}$  ✓
- (d)  $-\frac{2}{3}$

**3- Cube roots of  $-1$  are:**

- (a)  $-1, -\omega, -\omega^2$  ✓
- (b)  $-1, \omega, -\omega^2$
- (c)  $-1, -\omega, \omega^2$
- (d)  $1, -\omega, -\omega^2$

**4- The fourth proportional  $w$  of  $x : y :: v : w$  is:**

- (a)  $\frac{xy}{v}$
- (b)  $\frac{vy}{x}$  ✓
- (c)  $xyv$
- (d)  $\frac{x}{vy}$

**5- If  $a : b = x : y$ , then alternando property is:**

- (a)  $\frac{a}{x} = \frac{b}{y}$  ✓
- (b)  $\frac{a}{b} = \frac{x}{y}$
- (c)  $\frac{a+b}{b} = \frac{x+y}{y}$
- (d)  $\frac{a-b}{x} = \frac{x-y}{y}$



- 6-  $\frac{3\pi}{4}$  radian = ----- .  
(a)  $115^\circ$  (b)  $150^\circ$   
(c)  $30^\circ$  (d)  $135^\circ$  ✓
- 7- The set having only one element is called:  
(a) Null set (b) Power set  
(c) Singleton set ✓ (d) Subset
- 8- If  $A \subseteq B$ , then  $A - B$  is equal to:  
(a) A (b) B  
(c)  $B - A$  (d)  $\phi$  ✓
- 9- A frequency polygon is a many sided ----- .  
(a) Closed figure ✓ (b) Rectangle  
(c) Circle (d) Square
- 10-  $\sec^2 \theta = \text{-----}$ ..  
(a)  $1 - \sin^2 \theta$  (b)  $1 + \tan^2 \theta$  ✓  
(c)  $1 + \cos^2 \theta$  (d)  $1 - \tan^2 \theta$
- 11- Radii of a circle are:  
(a) Double of the diameter  
(b) All unequal  
(c) Half of any chord (d) All equal ✓
- 12- A tangent line intersects the circle at ----- .  
(a) Three points (b) Two points  
(c) Single point ✓ (d) Four points
- 13- The arcs opposite to incongruent central angles of a circle are always ----- .  
(a) Congruent (b) Parallel  
(c) Perpendicular (d) Incongruent ✓
- 14- The length of the diameter of a circle is how many times the radius of the circle?  
(a) 1 (b) 2 ✓  
(c) 3 (d) 4
- 15- The tangent and radius of a circle at the point of contact are ----- .  
(a) Parallel (b) Not perpendicular  
(c) Perpendicular ✓ (d) Not parallel